

PATENT APPLICATION OF  
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FOR  
COMMODITY TRADING SYSTEM

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## COMMODITY TRADING SYSTEM

### CROSS REFERENCE TO RELATED APPLICATIONS

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This application is a continuation-in-part of an application filed by the same inventor on July 29, 2000.

### BACKGROUND OF THE INVENTION

This invention relates to commodity trading systems and automated purchasing and selling systems.

The process of purchasing and selling commodities traditionally involves brokers and traders who determine the price and availability of commodities from a supplier and who negotiate with buyers of the commodity to have a desired commodity delivered at a higher price. Traditional methods involve determining the market price for a commodity when purchased in the quantity desired by the buyer, and then supplying that commodity in that quantity plus a commission paid by the buyer or with a discount paid by the supplier. Commodities are also bought and sold between a producer and an end user on a principal to principal basis.

Computer systems for buying and selling commodities are conventionally used, but such conventional systems implement transactions wherein a commodity is purchased and sold at a market price.

### SUMMARY OF THE INVENTION

It is an object of the invention to provide an automated, computer implemented method for purchasing commodities at prices which are below market prices.

It is another object of the invention to provide an automated computer implemented method of selling commodities.

A further object is to provide a computer implemented combined method of buying and selling commodities which is more efficient and effective than prior art methods.

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Manufacturers or suppliers of commodities have incentive to enter into such take or pay supply contracts and/or options because the intermediary carrying out the invention would normally agree not to approach existing customers of those manufacturers or suppliers, and also because they are able to utilize marginal capacity and/or sell their surpluses.

On the purchase side, identification of a supplier with surplus or marginal capacity is computer-implemented in a preferred aspect of the invention. On the sell side, offers are automatically made and accepted with little or no human intervention, which is quite different then the usual methods of selling commodities. A relational database can be used to process data to identify the suppliers of commodities having surplus capacities and rank the surplus capacities of commodities in order of best opportunities for profitable disposal of commodities and/or largest spread between cost to purchase the surplus capacities and probable selling price of the commodities. A sphere of influence for a commodity supplier is defined as a territory in which the commodity supplier normally sells most of its output, preferably at least about 80 percent of its output, and such sphere of influence is preferably included in the relational database. The database can also include demand numbers for each commodity in each territory and each sphere of influence and such numbers can be included in the relational database. The database preferably includes core tables of basic information about plants, customers, and products, linking tables of information linking the core boxes with each other, and other tables.

On the selling side, the offering price of combinations of commodities can be automatically adjusted based on one or more factors selected from the group consisting of currency exchange rates, currency risk, credit risk, country specific political risk, delivery dates, delivery locations, freight costs, Customs duties, and remaining available amount of each commodity in a particular combination under the take or pay and/or option to purchase supply agreements. Preferably, upon selection of an identified combination of commodities by an industrial consumer at the Web site, the industrial consumer may specify desired purchase contract terms such as quantity, date, and delivery location, and then the customer may enter via the Web site into an automatically generated binding purchase contract to purchase the selected identified combination of commodities under the selected terms.

It is preferred that none of the suppliers is identified on the intermediary's Web site. In some embodiments, the combinations of commodities are branded only with a name or mark of an owner of the Web site, usually the intermediary in order to prevent the customer from going directly to the supplier, and to protect the supplier from publicizing that it has surplus or marginal capacity.

The relational database can be used to determine likely variable costs, marginal capacities, sphere of influence, freight, foreign exchange rates, and/or labour costs and to rank suppliers of commodities in order of likely profitability for a given commodity to be purchased and resold.

In each case, the apparatus to carry out the method is a computer system programmed to deliver Web pages offering for sale to industrial consumers a combination of individual commodities at a combination price which is lower than the sum of the market prices of the individual commodities. The combination price is preferably automatically calculated based on the prices specified in one or more take or pay agreements and/or options contracts for commodities which have been negotiated with one or more suppliers of said commodities. The take or pay and/or option to purchase agreements would specify a cost for an individual commodity which is less than market cost in the absence of the take or pay and/or option to purchase agreement. The options agreements would provide a fixed payment to the supplier having excess capacity in consideration of the supplier agreeing to supply up to an agreed upon amount of the individual commodity at an agreed upon price.

An example of a take or pay contract is one for magnesia under which the purchaser (intermediary practicing the present invention) commits to purchasing 100 tons of magnesia over a three month period at a price of 300 euros per ton (when the market price is 400 euros) and then over the three month contract period calls for delivery of 50 tons to a first party on a first date, 25 pounds to a second party on a second date, and 20 tons to a third party on a third date, with payment upon delivery. At the end of the three month period, 5 tons have not been purchased, but the intermediary must pay 300 euros for each of the remaining unpurchased 5 tons according to the take or pay agreement.

An example of an option contract is one for 100 tons of magnesia to be purchased within three months at a price of 350 euros per ton, for which the intermediary pays 1500 euros in advance. If

the intermediary calls for delivery of 50 tons to a first party on a first date and does not call for delivery of any further portion of the 100 tons, the supplier still has 50 tons of excess capacity but has as compensation the 1500 euros option price or part thereof. If the intermediary had called for the delivery of all of the 100 tons, the supplier still keeps the 1500 euros as compensation for its risk that the intermediary might not have purchased the full 100 tons.

The computer can automatically calculate the sum of the individual costs plus a profit factor, further adjusted by one or more factors selected from the group consisting of quantity, date, currency exchange rates, currency risk, credit risk, country specific political risk, delivery dates, delivery locations, freight costs, Customs duties, and remaining available amount of each commodity in a particular combination under the take or pay supply agreements and/or option to purchase agreements. On the purchase side, the relational database can be used to identify suppliers of commodities having surplus capacities and a processor adapted to rank the surplus capacities of commodities in order of best opportunities for profitable disposal of commodities and/or largest spread between cost to purchase the surplus capacities and probable selling price of said commodities.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

The figures depict a preferred embodiment of the present invention for purposes of illustration only. One skilled in the art will readily recognise from the following discussion that alternative embodiments of the structures and methods illustrated herein may be employed without departing from the principles of the invention described herein.

FIG. 1 is a block diagram illustrating a preferred embodiment of an overview of the method of the invention.

FIG. 2 is a block diagram illustrating an embodiment of the profitability ranking system of the invention utilizing a computer having a relational database in which are records of certain information.

FIG. 3 is a block diagram illustration of an automated method of adjusting the offer price for combinations of commodities.

## DETAILED DESCRIPTION OF THE DRAWINGS AND THE PREFERRED EMBODIMENTS

The figures depict a preferred embodiment of the present invention for purposes of illustration only. One skilled in the art will readily recognize from the following discussion that alternative embodiments of the structures and methods illustrated herein may be employed without departing from the principles of the invention described herein.

Commodities are defined as industrial, mineral and agricultural products that are available in abundance (supply/capacity generally exceeds demand), for which quality differentiators between different sources of the same product (wherever in the world they may be located) are nominal, which have fair levels of global trade and product-mobility, and where competitive pricing is the crucial factor in a buying decision. Examples of Commodities would include industrial minerals, metals, paper & pulp, rubber, chemicals, petrochemicals etc.

Referring to FIG. 1, one of the first steps in the process is to determine 11 combinations of two or more commodities used in a single industry. For example, in the steel industry both raw iron and coke are used in more or less fixed ratios which are readily determined by those familiar with this industry. Assuming the conventional ratio is two tons of coke per ten tons of raw iron, the next step is to identify possible suppliers of the first commodity, coke and possible suppliers of the second commodity, raw iron, and select 13 a supplier of the first commodity. Many combinations of commodities are possible for the steel industry or any other industry where more than one commodity is normally purchased on a regular basis. On a separate track, and not necessarily at the same time, a supplier of the second commodity is selected 12.

The selection process can be automated with the assistance of a computer, wherein factors such as existing customers of a prospective supplier, sphere of influence, i.e., geographical area wherein at least about 80 percent or more of that supplier's customers are located, amount of margin between the spot market price of the commodity and the price called for in the take or pay contract or in the option contract (strike price), surplus volume available from that supplier, whether the complimentary commodity (e.g., raw iron in the case of coke) is available at favorable pricing, and the like.

Once a supplier is selected, a contract for a take or pay and/or option contract for the commodity is automatically generated and entered into 15 and 16, specifying the price, which must be below spot or market price, delivery locations, time requirements, and the like.

When supply contracts for appropriate combinations of commodities are entered into, the combinations are offered on a Web site 16 wherein only the identity of the organization offering the combination is given, i.e., preferably the suppliers' identifications are not given, and only the combination price is set forth, i.e., not the price of each individual commodity. Also given are delivery terms, locations, and other details needed to form a sales contract with the user.

If the order proposed by the user is for an amount wherein sufficient quantities of each commodity are available under the take or pay or option contracts, then the order is automatically accepted 17 and the order is processed by passing on delivery instructions to each of the separate suppliers of each commodity of the combination sold. Preferably, the automatic acceptance 17 is not immediate, but within twenty-four hours in order to allow the system time to contact alternative suppliers which may offer the best terms. If the amount exceeds the amount available, the user is automatically informed 18 as to the maximum amount available.

Referring now to FIG. 2, the computer 24 can be used to rank 25 suppliers of commodities in order of likely profitability for a given commodity to be purchased and resold based on many factors, including likely variable costs, marginal capacities, sphere of influence, freight, foreign exchange rates, and/or labour costs 21. For each supplier, the database 24 includes information 23 such as the commodity which can be supplied, supplier location, existing customers of supplier, offer price for take or pay contract or option contract, volume for take or pay or option contract, surplus or marginal capacity of that supplier, spot price, geographic sphere of influence, i.e., where at least about 80 percent or more of that supplier's customers are located for that commodity. The database also includes possible combinations 22 of two or more commodities, e.g., the aforementioned raw iron and coke, and possible volume ratios in which those combinations can be offered.

Referring to FIG. 3, the computer comprising the database and programmed processor 33 is also used to automatically adjust the combination price offered at the Web site to maintain a constant profit margin 25 or a target profit margin, automatically processing a number of factors, including consumer demand 33 for each commodity in each territory and each sphere of influence,



quantifiable currency exchange rates, currency risk, credit risk, country specific political risk, delivery dates, delivery locations, freight costs, customs duties, and remaining available amount of each commodity in a particular combination under said take or pay supply agreements and/or option to purchase agreements 32, and using core tables of basic information about plants, customers, and products, and linking tables of information linking the core boxes with each other, and other tables.

The method of the invention is advantageous to the commodity suppliers, the intermediary who operates the Web site, database, and computer, and to the customers who use and consume the commodities. The suppliers are able to sell volumes which they would not ordinarily have been able to sell without lowering their overall price, which would affect their prices with existing customer. Furthermore, they can be assured that the intermediary will not be competing with them in their "sphere of influence," that the fact that they are the actual supplier will not be made known to their existing customers or to the market, and that they have a chance to profit further if the intermediary Web site operator is unable to take the contracted amount and must pay for it/the option price anyway.

The intermediary is reasonably assured a profit because the computer is programmed to adjust the prices to guarantee a given profit margin. The intermediary's incremental cost of sales is very low because of the automation provided by this invention.

The consumer who purchases combinations of commodities through the Web site has the advantage of one stop shopping for the combination, and is also able to purchase the combination at a lower price than spot or market price.

The foregoing discussion discloses and describes merely exemplary embodiments of the present invention. As will be understood by those familiar with the art, the invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. Accordingly, the disclosure of the present invention is intended to be illustrative, but not limiting, of the scope of the invention, which is set forth in the following claims.